

d. & h. (1933.) ) Department.

*Mr* SERIES.

G.O. No. 116 PH.

DATED 17-1-33.

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[Despatch Abstract.]

Drainage:-

Mangalore Municipality - Preparation of plans and  
estimates - Papers recorded.

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15 JUN 1932

## PUBLIC WORKS DEPARTMENT.

KMR3/b EV

Received ..... 19

Registered 21 JUN 19

Subject.

No 1932

Mangalore drainage scheme - Investigation report.

## ENCLOSURES.

No. Report with  
estimate. 1  
Plan San. No.  
11/1932.1  
Spare copies 1. Report  
- estimate.

No. 2598

Station Chepauk, Madras, Dated the 13<sup>th</sup> June 1932.

From (Name) G.V. Rao Esq., B.Sc., Assoc. M. Inst. C.E.,  
(Designation) Sanitary Engineer to Government.

To The Secretary to the Government of Madras,

LOCAL SELF GOVERNMENT Department.

Sir,

(P)

With reference to G.O. No. Mis. 1205 P.H. dated 7th May 1929, a report on the investigation carried out by the Deputy Sanitary Engineer, Southern Circle, for a drainage scheme for Mangalore is enclosed. The approximate initial and maintenance costs of the scheme will be Rs 6,59,000 and Rs 12,000 respectively.

✓ As regards the drawing up of the detailed plans and estimates for the scheme, the Municipal Council have already deposited Rs 2,000 towards the special staff, but the necessary orders for taking it up, have not been issued by Government for the special establishment sanctioned. The scheme

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be taken up early in 1933, but the cost of the special establishment requires alteration. It will take at least one year to complete the preparation of plans and estimates and

a cost will be about Rs 3,200 as detailed below:-

|                                             |          |
|---------------------------------------------|----------|
| 1 draftsman for 12 months @ Rs 100 a month  | Rs 1,200 |
| 1 draftsman for 12 months @ Rs 80/- a month | Rs 960   |
| 1 tracer for 12 months @ Rs 35/- a month.   | 420      |
| 1 typist for 3 months @ Rs 40/- a month.    | 120      |
| Stationery, travelling allowance charges.   | 500      |

Rs 3,200

If the Council is willing to meet this expenditure and deposit the extra amount of Rs 1,200, orders may be issued for the preparation of plans and estimates, sanctioning the above establishment. In the ordinary course it will take about 3 to 4 years more to take up this scheme.

PSR/7-5-32.

~~G.V. Rao~~  
11/6/32.  
Sanitary Engineer to Govt.

~~GR~~  
7-6.

## MANGALORE DRAINAGE SCHEME.

### Investigation Report.

As early as 1903 a partial drainage scheme for the congested portion of the town Mangalore west, was prepared and it was estimated to cost Rs 1,87,000. This scheme was to collect sullage from houses through open drains and carry it through sewers laid in streets, to a pumping station located on the left bank of Netravati river and pump it direct into the river at its mouth which is subjected to the tidal action of the sea.

This scheme was not approved but returned in G.O. No. 90 L. dated 18-1-1911, with orders to adopt a system of open drains for the whole town and as a preliminary step it was recommended to open out the congested portions in the bazaar area as a sanitary measure, and also to facilitate introduction of drainage system. Consequently a few streets and roads have since been opened ~~but~~ but the question of a drainage scheme was not taken up until 1928. In 1929 at the request of the Municipality, the Government in G.O. No. 1205 P.H. dated 7-5-1929 sanctioned the investigation of a drainage scheme for Mangalore. These orders were based on the recommendation of the Sanitary Engineer in his letter No. 382 G. dated 23-7-1923 restricting the scope of the drainage scheme for wards 2, 3, 4 and portions of wards 6, 7, 8 and 9 eliminating the remaining areas, as they were considered not in need of any drainage system. This investigation was conducted in 1931 for the restricted area, i.e. areas which stand in need of a drainage scheme immediately or in the near future, while general levels have also been taken over the whole town to indicate the contours and the configuration of the town. The following is the report thereon.

#### The town and its physical features.

The town Mangalore is situated on the west coast at the confluence of the two rivers Netravati and Surpur with the Arabian Sea. It is about 5½ square miles in extent including,

including the extensions. Of this vast area only about  $\frac{2}{3}$  square mile is the busy and congested part of the town, which is in urgent need of a scientific method of a drainage, and the remaining area is covered with garden houses, public buildings, tile works and other industrial institutions and is appropriately called the 'garden city' which is so common on the west coast town. The congested area has a density of population of 60 per cent against 16 in non-congested areas as per census of 1931.

The whole town comprises of series of hillocks with distinct valleys and ridges and with a general slope towards west. There are two main valleys almost embracing a central hillock, the bazaar area which forms the main drainage water courses for the whole town. This hillock rises from the foreshore of the two rivers from a level of about R.L. +5.00 to a level of +176.00 above mean sea level, at the junction of Balamatta and Kadri road, a distance of about 3500 feet. The average rainfall of the town during the past 30 years is about 132 inches spread over an average of 113 days in the year, the highest rainfall being 150 inches and the lowest 100 inches in a particular year. Coupled with steep water courses, the soil and sub-soil <sup>are</sup> porous laterite. Consequently during rainy season the storm water rapidly disappears or flows down the water courses washing with it the town sullage and thus presenting a clean general appearance throughout the area. But during non-rainy season, part of sullage in the congested areas, soaks into the soil and pollutes the wells and backyards of houses, and part of it flows down through several unpaved water courses, stagnating in low places along the foreshore, and fouling the shore just in the busy and important part of the town and an appreciable quantity of sullage discharges into the river affecting the aquatic life in the river.

Therefore, the whole problem of drainage for the town is not a question of disposal of storm water but is a question of disposal of sullage in a scientific manner, relieving the town from the sewerage nuisance.

#### Scope of the drainage scheme.

The town is divided into 3 wards <sup>which</sup> are defined in plan San. No.

No. 11/1932. Of these, wards 5 and 9 and portions of wards 1 and 3 are full of garden houses and tile and other industrial centres and occupy about 4 square miles. The sullage in these places, comparing with the area is very small and the little that collects is used up for gardening purposes. The population in these wards is about 33,000 as per census of 1911. This area is not in need of any drainage scheme even in near future and the introduction of any such scheme, though possible will be very costly out of all proportion. This area may therefore be eliminated for the present from the scope of the drainage scheme. The remaining area may be divided into three drainage areas or blocks viz., blocks A and A<sub>1</sub>, B and C - vide San. No. 11/1932.

Block A is the bazaar area, comprising of wards 2, 3 and 4 and portions of wards 1, 5 and 7 occupying an area of .43 square miles with a population of 17,000 as per census of 1931 and is the most congested part of the town, which requires immediate introduction of a drainage system. At present, there are several box-shaped laterite drains in a few streets and unpaved water courses running, in many cases between the houses in the rear, which carry the sullage and rain water and discharge finally into the rivers. As already explained the sullage either soaks into the ground or stagnates along the water courses in low places causing nuisance or discharges into the river and pollutes them. This block needs immediate introduction of a drainage scheme.

Block A<sub>1</sub>. This comprises of ward 6 and portion of ward 7 with an area 0.4 square miles and with a population of about 6,000 as per census of 1911. This block is situated almost in the heart of the town, occupied by several public buildings, hospitals, police lines, railway station and educational and ecclesiastical institutions. The general slope of this area is towards east and the surface drainage flows down into the main valley on the south finally discharging into the river. Owing to the low density of population the problem of disposal of sewage is not much felt. However, the introduction of a drainage scheme cannot be postponed since this area is

and allow the sewage to soak into the soil just in the centre of civic activities which must tell upon the public health. This block stands in need of a drainage scheme next to block A, but once the main drainage scheme is introduced for block A a scheme for this area will not be costly as it could be gravitated and combined with the system of drainage for block A by providing a separate intercepting sewer from the hospital along the railway line to the Bardur road to discharge the sewage into the intercepting sewer of block A.

Block B. This block is situated to the north of block A and comprises of Kudroli, Bolur and Penlandpettah extensions and forms part of ward 1 with an area of 0.43 square miles and with a population of 5,000 as per census of 1931. Portion of surface drainage in the area flows into the river Gurgur direct and portions to the main valley on the north finally discharging into the river. The sewage either soaks in the backyards or finds its way into the river through the water course in the valley. A system of drainage is not much felt in this area but one would be necessary in the near future as the area is fairly developing. The sewage from this area cannot be gravitated into the main drainage system for block A but should be treated separately and preferably pumpin' sewage direct to the sewage farm.

Block C. This is situated to the south of block A and comprises portion of ward 8, suburb of Bolur, with an area of 0.32 square miles and with a population of 5,000 as per census of 1931. Portion of surface drainage flows into the river Metravati and portion into the main valley on the south. Similar to block B the sewage at present either soaks into the soil ~~and~~ <sup>and</sup> finds its way into the river and it cannot be gravitated into the main drainage system for block A. This area may have to be treated separately with a separate pumpin, station. But provision of separate treatment works for this area will not either be feasible or economical. The sewage therefore has to be pumped into the intercepting sewer of block A at its head and treated on one common sewage farm. Thus the drainage scheme may immediately be introduced in block A and may be extended to block A<sub>1</sub> subsequently and introduced later on in blocks 2 and 3, when these areas fully develop and finances permit. Water

Water supply. There is no ~~protected~~ water supply introduced for this town. Investigation for a scheme has been carried out and a preliminary report outlining the scheme is pending the decision of the Council. The present source of water supply is from wells.

General description of the drainage scheme.

The scheme in general is a pumping one, with open drains large enough to carry the sullage and the storm water run-off, from the area they serve, with  $\frac{1}{2}$  inch intensity of rain per hour, surplussing the storm water into the natural water courses and discharging the sullage into the intercepting sewers to the extent of 6 x D.W.F. based on the ultimate population at 15 gallons per head. The intercepting sewer will carry the sullage to the main pumping station, whence it will be lifted and pumped onto a sewage farm located about  $\frac{1}{2}$  mile away from the ~~xxxxx~~ northern limits of the town through a C.I. pumping main and finally disposed of into natural water courses after land treatment.

Detailed description of the scheme for block A.

Population. The population of the town which was 29,719 in 1871 has risen to 66,019 in 1931 showing an increase of 10% per every decade. The population of Block A is about 17,000 as per census of 1931. The place is already congested and it is not probable that there will be the same rate of increase in future decades in this area. Block A<sub>1</sub> could be gravitated into Block A when a drainage scheme is introduced in that area and block C should also be drained into block A though not by gravitation but by a small pumping installation. The latter two blocks have a population of about 11,000 as per census of 1931. The disposal works and the main intercepting sewer in block A must be large enough to deal with the sullage from these three areas blocks A, A<sub>1</sub> and C. The total population of the three areas is 28,000 as per census of 1931 and the ultimate population may be calculated on a 10% increase for every decade. Thus the ultimate population in 1961 may

be taken as 36,700 or roughly 37,000 in the 3 areas. The sewers will have to be designed large enough to deal with this ultimate population so also the pumping plant and the pumping main.

#### Open drains and their capacities.

In designing the drainage scheme for Calicut, a west coast town, it was considered that the capacity of open drains should be based on 1" intensity of rainfall per hour for town, where the average rainfall was more than 40 inches per year and  $\frac{1}{2}$ " intensity up to 40 inches per year and this principle is understood in a general way that for towns in west coast where the rainfall is very high 1" intensity shall be adopted and for other towns  $\frac{1}{2}$ " intensity. This appears rather an anomaly. The quantity of rainfall and the number of rainy days have no bearing on the capacities of open drains. The capacities depend on the intensity which may be common both in the east as well as in the west. One inch intensity may perhaps be applicable for flat towns like Calicut and Tellicherry but ~~for~~ not for Mangalore, which possesses steep slopes commanding good gradients. Again as already explained the drainage problem in Mangalore is not one of disposal of storm water but efficient disposal of sullage. The difference between 6 x D.W.F. and the storm water flow will be so abnormal if 1" intensity is adopted and is not therefore advocated. Therefore, the open drains for Mangalore will be designed with  $\frac{1}{2}$ " intensity of rainfall per hour but with a velocity of 2.5' as minimum as against 2'-0" per second, which is generally adopted for these drains, so that a comparatively greater cleansing velocity may be obtained while carrying sullage only.

Location of drains. The drains will generally be located on both sides of streets and lanes. In some streets the houses have a natural fall to the rear and drains into the existing unpaved water courses located between the rows of houses. To combine these water courses both as storm water and sullage drains will not be either efficient or economical as they entail greater, constant supervision and maintenance. In such places small rider drains

drains will be provided to carry the sullage into the intercepting sewer, if necessary, by acquiring a small strip of land along the water courses.

Existing water courses. Will be retained exclusively for rain water and will be straightened, paved throughout and regraded with suitable gradients. Where the drains run in inaccessible places provision will be made for making them easily accessible.

Conservancy lanes. There are certain areas where houses abut each other and with latrines located in the rear. The only entrance for the scavenger to reach these latrines is the front door. It is necessary in such cases to open out conservancy lanes between the row of houses. This will not however be a right charge on the drainage estimate, but the Municipality may have such lanes opened out as sanitary and town improvement measure. The open drains can then be located in these conservancy lanes in such place.

Open drains and their description. The open drains will be of standard type ranging from 6" to 18". There will be about 26 miles of open drains in block A. These are proposed to be built with cement concrete (as brick work is found costlier than cement concrete by nearly 33%) on concrete foundations of lime mortar and will be plastered with cement mortar  $\frac{3}{4}$ " thick. But if ordinary country bricks could be obtained at cheaper rates, brick in lime mortar may be substituted for cement mortar.

Intercepting sewers. There will be four intercepting sewers in this area. Sewers Nos. 1 and 4 are to run along the flat foreshore a distance of nearly a mile. The sewers Nos. 2 and 3 run down the slopes. Sewers Nos. 1 and 2 are necessitated owing to the flat nature of foreshore to gravitate the sullage from the northern and southern limits. Sewers 2 and 3 are proposed in order to reduce the sizes of lateral drains in the lower reaches which will otherwise be comparatively larger while carrying the total sullage drainage into them along their course in a distance of half

half a mile from the top down to the intercepting sewers. By this method the sullage will discharge into the sewers at different points and will not be exposed throughout the length and contaminate the atmosphere in the area. Thus the introduction of these two sewers will add to the efficiency of the system and also make it economical. All these sewers will have a capacity capable to carry 6 x D.W.F. - at 15 gallons per head on an ultimate population of 3 decades hence.

Intercepting sewer No. 1. Commences from the northern end of the bridge over the main water course on the north and runs from north to south. It carries the sullage from portion of Kudroli area and a portion of Bazaar area and discharges into the pumping station. It starts as a 9" with sill level  $+3.00$  and enlarges into 12" in the lower reaches and ends with invert level of  $-4.00$  at the Pumping Station. This sewer will be about 2180 feet long and serves an ultimate population of about 11,000.

Intercepting sewer No. 2. This sewer runs on the slope from east to west and carries the sullage from the northern half of the Bazaar area. It commences at the junction of Court new road with Field street No. 1 and passes through Car street, Brahmins street and New street No. 2 and discharges into the intercepting sewer No. 1. This sewer will be of 9" diameter and of 2600 feet long and will maintain greater velocity having a natural ground slope. A storm water drain or water course almost runs parallel and near to it into which the storm water from the open drains will be surplussed and sullage is carried into the sewer.

Intercepting sewer No. 3. This sewer also runs on the slope from east to west and carries the sullage from the southern half of the Bazaar area. It commences from Gollakara street and passes through Bibi Alavi street, Gollakatta street and Shoe Bazaar road and discharges into the intercepting sewer No. 4. This will be about 2000 feet of 9" throughout and will maintain a good velocity similar to sewer No. ② ?

Intercepting sewer No. 4. This commences as a 12" sewer at the Railway Goods yard in Bandar road with invert level  $+1.00$  and passes through Bandar road, south to north and ends with 15" at  
the

the Pumping Station with invert level  $-3.00$  and will be 4067 feet long. This sewer will have to carry the sullage from the southern half of the Bazaar area for the present to the extent of 6 x D.W.F. on a population of 11,700 and ultimately the sullage from block A<sub>1</sub> to the extent of 6 x D.W.F. on a population of 7,800 and from block C to the extent of 2 to 3 x D.W.F. on a population of 6,500. The maximum depth of this sewer will be about 13' to 14' below ground level. But if a suitable site for the Pumping Station could be got at a reasonable cost about 1000 feet towards the south of the present site, the depth might be reduced by 2' to 3'. This aspect will be examined in more detail in drawing up the scheme.

Stoneware pipes will be costlier on account of excessive railway freight from Calcutta to Mangalore. It is therefore proposed to use Hume's cement concrete pipes for these sewers, which are suitable for intercepting sewers and are comparatively cheaper.

Pumping Station. This station will be located at the site now occupied by the Municipal rubbish dumping ground on the bank of river Gurpur, if a more suitable site 1000 feet to the south of this site could not be secured at a reasonable cost. The station will consist of two screening and sludge wells, a pumping well, and a building large enough to meet the ultimate requirements of the pumping plant etc. Provision will be made in the sludge well for modern method of sludge removal such as a chain pump or so, and an overflow to surplus excess storm water during rains. The whole station will be enclosed with a compound wall and provided with a gate and watchman's shed.

Pumping main. A 12" C.I. pumping main will be provided. The present and ultimate carrying capacity of this main will be as follows:-

|                                                                                          |                |      |                              |
|------------------------------------------------------------------------------------------|----------------|------|------------------------------|
| Block A ultimate population 22000 single D.W.F. @ 15 gals. per head = 230 gals. per min. |                |      |                              |
| "                                                                                        | A <sub>1</sub> | -do- | 81 -do-                      |
| "                                                                                        | C              | -do- | 68 -do-                      |
| Ultimate total.                                                                          |                |      | 379 or<br>say 300 gals. p. . |

For the present the main can carry three times D.W.F. flow of block A i.e.  $230 \times 3 = 690$  gallons per minute and ultimately it will carry two times D.W.F. from block A, A<sub>1</sub> and C i.e. 760 gallons per minute with a little more head. The main will be 12,100 feet long and will be laid along Kulur Ferry road and through Pentlandpettah extensions to the sewage farm. It will maintain a velocity of 2.36 feet per second (grade  $1/230$ ) while carrying 690 gallons per minute and will increase to 2.382 feet per second while carrying 760 gallons per minute ultimately. The total head on this main will be:

|                                                                            |    |        |           |
|----------------------------------------------------------------------------|----|--------|-----------|
| Suction level                                                              | .. | -11.00 |           |
| Ground level at farm.                                                      | .. | +77.00 |           |
|                                                                            |    | -----  | = 88      |
| Friction loss on 12" main while carrying 690 gallons per minute 12100/336. |    |        | 36        |
| Other losses.                                                              | .. |        | 6         |
|                                                                            |    |        | -----     |
|                                                                            |    |        | 130 feet. |
|                                                                            |    |        | ---       |

Pumping plant. The plant will consist of oil engines with centrifugal pumps. For the present two sets of engines and pumps capable of lifting 340 gallons per minute, one set capable of pumping 690 gallons per minute to a total head of 130 feet will be provided. These three sets may be augmented later on when need arises with a fourth plant of large capacity.

The B.H.P. of the larger set with 50% efficiency will be

$$\frac{690 \times 10 \times 130}{33000} \times 2 = 54 \text{ B.H.P.}$$

and the smaller ones of 27 B.H.P.

Sewage farm. The farm is proposed to be located at the present municipal high soil trenching ground about  $2\frac{1}{2}$  miles away from the pumping station and  $\frac{1}{2}$  mile beyond the town limits on the north. The area is a municipal land and consists of 3 or 4 hillocks with levels ranging from +90.00 to +30.00. About 41 acres are available at this site, but good quantity of cutting and levelling will be necessary to make the site suitable for farming purposes. The whole area of 41 acres may be required ultimately but for the present 30 acres will be levelled and formed into terrace-field suitable for cultivation. The soil

is porous and is quite suitable for the farm but it will be under-drained with sub-soil pipes. The effluent from the farm will be ~~xxx~~ led into the natural water courses on the north and will be used up for cultivation lower down and the little, if any, finds its way into the Turpur river. The highest level of the farm will be kept 75.00 and level of the outlet end of the pumping main at +77.00.

Approximate cost of the scheme. The proposed scheme will solve the drainage problem of block A, the most congested part of the town. The approximate cost of the scheme will be 6.59 lakhs to instal and Rs 12,000 nett to maintain annually, after deducting the revenue from the sewage farm to the extent of Rs 3,000. The introduction of this scheme will effect a saving in the present expenditure on the conservancy of drains, which is not taken into consideration.

Disposal of night soil: Once the interception sewers and the disposal works with the pumping plant are installed, a few night soil dumping pits may be constructed at convenient places in the area for the disposal of night soil into the sewers and pumped on to the sewage farm along with the sewage and finally used up for irrigation. These dumping pits may be introduced later on and the cost is therefore not included in the present approximate estimate. Provision of these pits will save the municipality large expenditure in carting it to the trenching ground.

Programme of execution. The scheme is suitable for piecemeal execution, but the disposal works, viz., engine house, pump and sludge wells, one set of pumping plant, pumping mains and a portion of the sewage farm so also portions of one or two intercepting sewers costing about 1.5 lakhs may have to be introduced first and the remaining work may be carried out as funds permit but on a well-thought out programme year after year.

## ESTIMATE FORM—Abstract.

| Item number.  | Quantity. | Description of work.                                                                      | Rate. | Per   | Amount        | Total.          |
|---------------|-----------|-------------------------------------------------------------------------------------------|-------|-------|---------------|-----------------|
| (1)           | (2)       | (3)                                                                                       | (4)   | (5)   | (6)           | (7)             |
|               |           | <u>MAHARAJA DRAINAGE SCHEME.</u>                                                          | RS.   |       | RS.           | RS.             |
|               |           | <u>Initial cost.</u>                                                                      |       |       |               |                 |
|               |           | Constructing open drains of standard type:                                                |       |       |               |                 |
| 60,200        | feet      | 6" -do-                                                                                   | 168   | ft.   | 96320         |                 |
| 45,200        | "         | 9" -do-                                                                                   | 210   | "     | 94920         |                 |
| 10,100        | "         | 12" -do-                                                                                  | 260   | "     | 39260         |                 |
| 9,300         | "         | 15" -do-                                                                                  | 320   | "     | 30720         |                 |
| 6,900         | "         | 18" -do-                                                                                  | 380   | "     | 26,220        |                 |
| <u>137000</u> |           | (about 26 miles)                                                                          |       |       | <u>287440</u> |                 |
|               |           | Raising side walls wherever necessary and providing Cuddapah slabs in front of houses.    |       |       | 15000         |                 |
|               |           | Providing cutstone cover slabs at road crossings.                                         |       |       | 7000          |                 |
|               |           | Open drain junctions and storm water overflows.                                           |       |       | 5000          | 3,14,440        |
| 5,100         | feet      | 9" R.C. Hume pipes including excavation, laying, jointing manholes etc. complete.         | 2/12  | Rft.  | 14025         |                 |
| 3,000         | "         | 12" -do-                                                                                  | 3/8   | "     | 10500         |                 |
| 2,700         | "         | 15" -do-                                                                                  | 5/-   | "     | 13500         |                 |
| <u>10800</u>  |           | Drops, ventilators, etc.                                                                  |       | L.S.  | 5000          |                 |
|               |           | Shoring, pumping, cement concrete bedding etc. at necessary places.                       |       |       | 10600         | 53,025          |
| 12,100        | feet      | 12" C.I. pumping main (B. Class) including excavation, laying, jointing, etc. complete.   | 7/-   | Rft.  | 84700         | 84,700          |
|               |           | Engine house, with compound wall &c. complete.                                            |       |       | 14000         |                 |
| 2             |           | Screening and sludge wells                                                                | 1800  | Each  | 3600          |                 |
| 1             |           | Collecting and pump well                                                                  | 2400  | "     | 2400          |                 |
| 2             | Units     | of 27 B.H.P. ) Oil engine, pumps etc.                                                     |       |       |               |                 |
| 1             | Unit      | of 54 B.H.P. ) complete including erecting charges at the station.                        |       |       | 25000         |                 |
| 30            | acres     | Laying out sewage farm.                                                                   | 500   | acres | 15000         | 45,000          |
| 5600          | feet      | For paving and revetting the existing storm water channels using the available materials. | 3     | ft.   | 16835         | 16,835          |
|               |           |                                                                                           |       |       |               | <u>5,29,000</u> |

CIRCLE—

DIVISION—

DISTRICT—

TALUK (OR ESTATE IN CASE OF ESTATE WORKS).

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**ESTIMATE FORM—Abstract.**

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Financial head—

Budget head—

Departmental head—

Main head—

Sub-head—

Project of which  
the work forms part—

Section—

Name of work—

Amount of Estimate, Rs.

To be carried out by—

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REFERENCES.



# ESTIMATE FORM—Abstract.

| Item number. | Quantity. | Description of work.                                                              | Rate. | Per   | Amount | Total. |
|--------------|-----------|-----------------------------------------------------------------------------------|-------|-------|--------|--------|
| (1)          | (2)       | (3)                                                                               | (4)   | (5)   | (6)    | (7)    |
|              |           |                                                                                   | RS.   |       | RS.    | RS.    |
|              |           | <u>Annual Maintenance Charges.</u>                                                |       |       |        |        |
| 12 x 1       |           | Head driver                                                                       | 80    | month | 960    |        |
| 12 x 2       |           | Assistant drivers                                                                 | 45    | "     | 1080   |        |
| 12 x 3       |           | Engine cleaners                                                                   | 15    | "     | 540    |        |
| 12 x 2       |           | Scavengers for the removal of sludge                                              | 15    | "     | 360    |        |
| 12 x 1       |           | Watchman.                                                                         | 12    | "     | 144    |        |
|              |           |                                                                                   |       |       |        | 3,084  |
|              |           | Fuel for engines $\frac{54}{9} \times 365 \times 3 \times .55 \times \frac{1}{2}$ |       |       | 4800   |        |
|              |           | Lubricant and waste.                                                              |       |       | 360    |        |
|              |           | Extra pumping in rainy days, lighting, etc.                                       |       |       | 800    |        |
|              |           |                                                                                   |       |       |        | 5,960  |
| 12 x 16 Nos. |           | Sewer and drain coolies.                                                          | 12    | month | 2304   |        |
| 12 x 2       |           | Maistries                                                                         | 20    | "     | 480    |        |
| 12 x 4       |           | Sewage farm coolies.                                                              | 15    | "     | 720    |        |
| 12 x 1       |           | -do- head cooly.                                                                  | 20    | "     | 240    |        |
|              |           |                                                                                   |       |       |        | 3,550  |
|              |           | Tools etc.                                                                        |       |       | 206    |        |
|              |           | Repairs to plant and depreciation.                                                |       |       | 1200   |        |
|              |           | Repairs to drain.                                                                 |       |       | 1000   |        |
|              |           |                                                                                   |       |       |        | 2,406  |
|              |           |                                                                                   |       |       |        | 15,000 |
|              |           | Probable income from sewage farm.                                                 |       |       |        | 3,000  |
|              |           | Total.                                                                            |       |       | Rs.    | 12,000 |

PSV/7-6-32.

G.V. Rao 11/6/32.  
Sanitary Engineer to Govt.

AR

7-6.

CIRCLE—

DIVISION—

DISTRICT—

TALUK (OR ESTATE IN CASE OF ESTATE WORKS).

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**ESTIMATE FORM—Abstract.**

---

Financial head—

Budget head—

Departmental head—

Main head—

Sub-head—

Project of which  
the work forms part—

Section—

Name of work—

Amount of Estimate, Rs.

To be carried out by—

---

REFERENCES.

63/306

20/6.

b. v.

20/17

C. E.

2. The Sanitary Engineer reports that the approximate initial cost of the drainage scheme would be Rs. ~~6,59,000~~ 6,59,000 and that the net annual cost maintenance after deducting the anticipated revenue from the sewage farm would be Rs. 12,000. Ordinarily the Govt. meet one half of the capital cost of such schemes and the remaining half is provided by the local body either by taking a loan from Govt. or from its own resources. In view of the present financial stringency the Govt. are

unable to promise either a grant or a loan towards the cost of the scheme.

3. The Sanitary Engineer reports that the preparation of the detailed plans and estimates for the scheme cannot in the usual course be taken up for three more years, but that if the municipal Council provides a sum of Rs 12,00/- in addition to the amount of Rs 2,000/- already deposited by it with the S.E. towards the cost of the special staff required for the ~~preparation~~ purpose, the work can be taken up <sup>early</sup> in 1933.

4. The C. M. C. is requested to report

(1) whether the municipal Council accepts the scheme outlined by the Sanitary Engineer;

(2) whether it desires to have the scheme executed piecemeal in accordance with G.O. No.

1117-P.H. dated 7-6-27 or otherwise;

(3) how it proposes to finance the scheme; and

(4) whether it desires that the

(10)

preparation of the detailed plans and estimates for the scheme should be taken up in 1933 and if so whether it is willing to provide a sum of Rs 2,000/- ~~for~~ in addition <sup>to the</sup> ~~which~~ Rs 2,000 has already been <sup>but</sup> deposited with the S.E. towards the cost of the special staff required for the purpose.

Ln  
24/6

18  
24/6

Ln  
24/6

To

The C.M.C. Mangalore.

(with copy of pp. 1-16 of and

2) 1 plan to be returned with reply.

Copy to the Sanitary Engineer  
(gsm)

✓  
✓

8/11

2/2/32



لهم

W. H. C. C. C.



14  
26/8

L.S.L., P.H. Dept

Copied 6/11/32

f-2 f-1  
X 26/8

C. no. 31671- From the C.M.C. Mangalore

no. 469 d. 10.8.32.  
32-33

Subject: - Drainage Scheme - Mangalore  
M.L.C. - preparation of  
plans and estimates.

26/8

Memo. 21696-2. E.2.P.H. d. 24-8-32

The C.M.C. Mangalore is  
informed that the question of the  
preparation of plans and estimates  
for the Mangalore Drainage Scheme  
can be considered only after receipt  
of the views of the Council on the  
remaining <sup>para 4 of</sup> ~~other~~ points raised in ~~memo~~ memo.

page 174, no. 21696-1. E.2.P.H. d. 29.6.32.

To

The C.M.C.  
Mangalore  
(200)

26/8/32

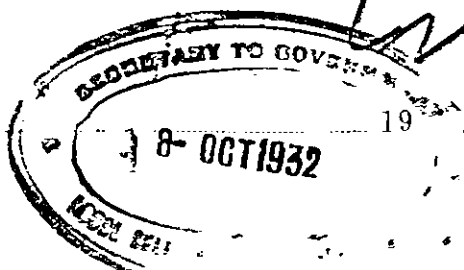
26/8

26/8/32

26/8/32

DEPARTMENT.

Received



Registered

44318

19

Subject.

p17anti

Government Memorandum No.21696-1 E2, P.H., dated 29th  
June 1932 -- reply submitted.

\*\*\*\*\*

## ENCLOSURES.

No. one

Spare copies-

C. No.

469  
 -----  
 32--33

Station Mangalore, Dated the 3rd October 19 32.

From (Name) M.R.Ry. K. Vittal Shetty, Avargal.,

(Designation) Chairman, Municipal council, Mangalore.

To The Secretary to the Government of Madras,

LOCAL SELF GOVERNMENT Department.  
FORT ST. GEORGE, MADRAS.

Sir,

p17anti

Referring to Government Memorandum No.21696-1E2,  
P.H., dated 29th June 1932 I have the honour to enclose --  
herein a copy of the council's resolution on the subject.

Your obedient servant,

Chairman, M.C.

No. ....

of a special meeting

*Extract from the Proceedings of the Mangalore*  
*Municipal Council, dated 30th September 1932*

PRESENT:-

x

x

x

x

17. Read report of the committee appointed by the council to report regarding the points raised by Government in their ----  
Memorandum No.21696-1 E2, P.H., dated the 29th June 1932, in connection with the drainage scheme in Mangalore Municipality.

1. The council accepts the scheme outlined by the Sanitary Engineer.

2. The council desires to have the scheme executed piecemeal in accordance with G.O.No. 1117 P.H., dated the 7th June 1927.

3. In view of the observation made in para 2 of Government Memorandum No.21696-1 E2, P.H., dated the 29th June 1932 that the Government are unable to promise either a grant or loan, the council sees no way of taking up any substantial portion of the scheme and working out the same, but as every year there are demands from various wards of the municipality for the repair or construction of drains the council thinks that it would be desirable to make such constructions in accordance with the scheme now proposed by the Government so that ultimately they may fit in with the rest of the scheme whenever it may be taken up. With this view the council hopes to spend every year some amount for this purpose so that the same may be carried out in accordance with the G.O.No.1117 P.H., dated the 7th June 1927.

4. The council desires that the preparation of the detailed plans and estimates for the scheme should be taken up in 1933 and the council has resolved accordingly in its meeting held on the 8th August last and the same has already been communicated to the Government.

x

x

x

/True Extract/

Municipal Office, )  
Mangalore, 3-10-32. )

Chairman, Municipal Council.

22/11

p23cf

25

29/11

29/11

28/11

p24cf

P. S. G. (P.H.) Dept.

from the C.M.C. Mangalore No. 467 of 30.10.32

Subject: - Drainage Scheme - Mangalore Mpl. Co.

Memo No. 21696-4.E.2.P.H.d.28.11.32

In its resolution no. 17 dated 30.9.32 the Mangalore M.C. has expressed its inability to take up any substantial portion of the drainage scheme outlined by the S.E. ~~and execute it, but~~ <sup>to execute</sup> has proposed <sup>to carry out year after year</sup> ~~isolated~~ <sup>isolated</sup> works for the repair or construction of <sup>such</sup> drains ~~which~~ <sup>as</sup> will fit in with the main drainage scheme in wards where <sup>the</sup> demands for drainage improvements <sup>is</sup> pressing. The Council is informed that Govt would ~~point out to~~ <sup>point out to</sup> the Council that unless it ~~for~~ decides to carry out ~~through the execution of~~ the entire scheme in a reasonable number of years <sup>the town</sup> it can derive no permanent benefit from such isolated works and that the detailed plans and estimates <sup>for the scheme</sup> prepared now will not serve any useful purpose & they ~~may~~ <sup>would</sup> ~~probably~~ become obsolete.

let by the time that the ~~cost~~ installation of the main scheme is taken up. The Govt accordingly make ~~for~~ for the consideration of the Council the following suggestion

1. To with help the Council to solve its drainage problem.

~~Under the question.~~

As stated by the Sanitary Engineer

2. If the scheme is capable of piecemeal execution but the disposal works, viz engine house, pump and sledge well, one set of pumping plant, pumping mains and a portion of the ~~sewerage~~ ~~main~~ <sup>with have to</sup> costing about Rs. 1.5 lakhs ~~should~~ be ~~carried out~~ <sup>carried out</sup> first. The ~~installation~~ <sup>execution</sup> of these works may be spread over 2 or 3 years. [The whole scheme may be carried out on a definite programme of executing the work to the extent of Rs. 60000 every year.] <sup>3.</sup> The total cost of the scheme if carried out piecemeal will also ~~be reduced as the centage charges~~

be reduced as the centage charges of  $15\frac{1}{2}\%$  will be reduced to ~~only~~

3% under para 3.4 of G.O. no. 1112.P.H. (0)

d. 7.6.27. Allowing a portion of these savings for special supervision charges, the approximate

total cost of the scheme may not exceed Rs. 6 lakhs. The whole scheme may be carried out on a definite programme of executing the works to the extent of Rs. 60,000 every year, <sup>completing the whole scheme</sup> ~~and the whole scheme may be completed in about 12 years.~~

4. The Council has no accumulated funds at present to finance the scheme. It levies no water and drainage tax. The surplus in general revenues after levying the general property tax at 10% and allowing credit for 50% of tolls compensation may be estimated at Rs. 25,000 in a normal year out of which about Rs. 20,000 may be set apart for the drainage scheme. The Council need <sup>then</sup> find only the balance of Rs. 40,000 plus the annual maintenance charge of Rs. 600/- to Rs. 12,000/- <sup>for this purpose</sup> ~~The Council~~ ~~will have to levy a w. and d. tax at 5% rate as will cover each year's capital expenditure and the maintenance charge.~~ ~~the Council begins with a 5% rate it can avoid debt~~

~~The budget of a~~  
~~Assessment Committee at 5% would~~  
~~be sufficient with this~~

necessary. If, however, the  
Council prefers to borrow money  
for each year's capital expenditure  
it will have to impose in the first  
year after the work is started one  
per cent <sup>as</sup> W & D tax and in order to  
provide for increases ~~in each~~  
~~year~~ under annuities <sup>every year</sup> increase  
the rate by  $\frac{1}{3}$  per cent in each  
succeeding year. <sup>if and</sup> When the  
Govt's share of the expenditure is  
received the money can be  
applied to reduce the debt  
and the rate of W & D tax  
may be proportionately reduced.]

5. The chairman is requested  
to obtain and submit <sup>to the Govt</sup> the views  
of the Council on the matter ~~to the~~  
~~Govt~~

100  
25/11

11/11  
23/11

[ 2 ] in the annex

|                            |           |
|----------------------------|-----------|
| Dpd. by                    | Van ✓     |
|                            | Post ✓    |
|                            | Messenger |
| Dpr's. initials. <i>SP</i> |           |
| Dtd. 29/11/32              |           |

To

The C.M.C. ✓

Mangalore

Copy to the S.E. ✓

8 more copy  
14/11

Memorandum No.21696-4 E-2 P.H., dated 28th November 1932.

Read:-

From the Chairman, Municipal Council, Mangalore, C.No.  
469/32-33, dated 3rd October 1932.

Drainage Scheme - Mangalore Municipality.

---  
In its resolution No.17, dated 30th September 1932, the Mangalore Municipal Council has expressed its inability to take up any substantial portion of the drainage scheme outlined by the Sanitary Engineer but has proposed to carry out year after year the repair or construction of such drains as will fit in with the main drainage scheme in wards ~~where~~ where the demand for drainage improvements is pressing. The Government would point out to the council that unless it decides to carry out the entire scheme in a reasonable number of years the town can derive no permanent benefit from such isolated works and that the detailed plans and estimates for the scheme if prepared now will not serve any useful purpose as they would become obsolete by the time that the installation of the main scheme is taken up. The Government accordingly make for the consideration of the Council the following suggestion which will help the council to solve its drainage problem.

2. As stated by the Sanitary Engineer the scheme is capable of piecemeal execution but the disposal works viz. engine house, pump and sludge wells, one set of pumping plant, pumping mains and a portion of the sewage farm costing about Rs.1.5 lakhs will have to be carried out first. The execution of these works may be spread over 2 or 3 years.

3. The total cost of the scheme if carried out piecemeal will also be reduced as the cartage charges of 15½ % will be reduced to 3 % under para. 3(f) of G.O.No.1117, P.H., dated 7th June 1927. Allowing a portion of these savings for special supervision charges, the approximate total cost of the scheme

may not exceed Rs.6 lakhs. The whole scheme may be carried out on a definite programme of executing works to the extent of Rs.60,000 every year completing the whole scheme in about 10 years.

4. The Council has no// accumulated funds at present to finance the scheme. It levies no// water and drainage tax. The surplus in general revenues after levying the general property tax at 10% and allowing credit for 50% of tolls compensation may be estimated at Rs.25,000/- in a normal year out of which about Rs.20,000 may be set apart for the drainage scheme. The Council need then find only the balance of Rs.40,000 plus the annual maintenance charges of Rs.6,000/- to Rs.12,000/-. For this purpose it will have to levy a water and drainage tax at 5%. If, however, the Council prefers to borrow money for each year's capital expenditure it will have to impose in the first year after the work is started one per cent as water and drainage tax and in order to provide for increases under annuities every year increase the rate by 1/3 per cent in each succeeding year.

5. The Chairman is requested to obtain and submit to the Government the views of the Council in the matter.

S.G. SENGODAIYAN,  
Deputy Secretary.

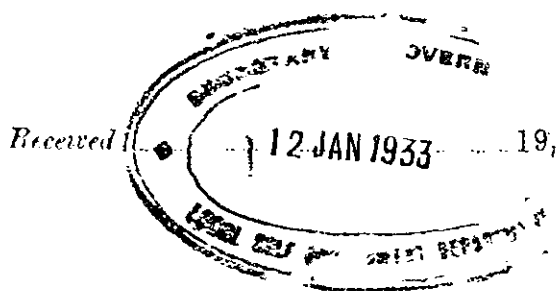
To the Chairman, Municipal Council, Mangalore.  
Copy to the Sanitary Engineer.

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FORWARDED.  
(By Order).

Superintendent.

## DEPARTMENT.



01371

Registered. . . . . 19 .

Subject.

Government Memorandum No. 21696-4 E 2 P. H.  
dated 28th November 1932 -- Drainage Scheme -- Mangalore  
Municipality -- reply submitted.

\*\*\*\*\*

|               |            |
|---------------|------------|
| ENCLOSURES.   |            |
| No.           | <u>One</u> |
| .....         |            |
| Spare copies. | .....      |

C. No. 469

32 - 33.

Station Mangalore , Dated the 9th January 19 33

From (Name) M. R. Ry. K. Vittal Shetty, Avargal.,  
(Designation) Chairman, Municipal Council, Mangalore..

To The Secretary to the Government of Madras,

LOCAL SELF GOVERNMENT Department.  
FORT ST. GEORGE, MADRAS.

Sir,

Referring to Government Memorandum No. 21696-4E2,  
P. H., dated the 28th November 1932, I have the honour to  
enclose herein a copy of the Council's resolution on the  
subject.

Your obedient servant,

CHAIRMAN, M.C.

H.D.U.

H/S

*Extract from the Proceedings of the Mangalore  
Municipal Council, dated 5th January 1933.*

PRESENT:-

\*

\*

\*

7. Read Government Memorandum No. 21696, dated the 28th November 1932 on the subject of drainage scheme in Mangalore Municipality.

In view of the present financial stringency and various other pressing needs of the Town, the Council is not in a position to work out the scheme at present. Hence the detailed estimates need not be prepared.

\*

\*

\*

/True Extract/

Municipal Office,

Mangalore, 9th January 1933

Chairman, Municipal Council.

1/8

H.D.U.

L.S.G. (PH) Dept

C. no 21696 From the Sanitary Engineer No 2599  
dated 13.6.1932

p14

Subject:- Drainage - Mangalore Municipality -  
report on investigation.

pref

The Sanitary Engineer has submitted a report on the investigation carried out for a drainage scheme for the Mangalore Municipality. The initial cost of the scheme is estimated to be Rs. 6.54 lakhs. ~~and~~ The <sup>net cost of</sup> annual maintenance charges after deducting the revenue from the sewage farm is estimated at Rs. 12000 per annum.

p. 5. Cf.

p24

2. Fr. Sanitary Engineer reports that in the usual course the preparation of detailed plans and estimates for the scheme cannot be taken up for three or four years and that if the Council wants to have the plans and estimates ready earlier it should provide a sum of Rs 3200/- towards the cost of the special staff. The Council has already deposited with the Sanitary <sup>Engineer</sup> a sum of Rs 2000. & will have to ~~provide~~ <sup>provide</sup> an addl Rs. 1200 if it wants the preparation of plans & estimates taken up. In view of the present financial stringency Govt cannot promise any grant or loan for the scheme at present. The Council may be asked to report how it <sup>pro</sup>proceeds.

p. 1 Cf

to finance the scheme.

A draft memo is submitted for approval.

KV  
24/6  
24/6

26/6/32

28/6/32

Memo. No. 21696-1.E.2.P.11 dated 29-6-32

17/6

C. No. 31671. From the C.M.C. Mangalore.

20/6

C. No. 469 d. 10.8.32  
32-33

Please see the letter from the

C.M.C. on pp 20-21 of

2. The Mangalore M.C. has not yet considered the question as to how it proposes to finance the drainage scheme. Until this aspect of the matter is settled it appears that no useful purpose will be served by ordering the preparation of detailed plans and estimates; as for if the Council ~~finds~~ <sup>in the near future</sup> ~~itself~~ unable to meet the cost of the ~~scheme~~ either installing the scheme either wholesale or piecemeal, the plans and estimates ~~it~~ <sup>may</sup> become obsolete when the scheme is actually taken up. A draft memo is submitted for approval.

KV  
19/8  
23/8

24/8

p 22 f

p 23 cf

- Memo. no. 21694-2. E. 2. P. H. dated 24.8.32.

- C. no. 44318. From the C.M.C. Mangalore.

C. no. 469 dated 3.10.32  
31-33

Please see the resolution of the  
Mangalore M.C. on p. 24 cf.

p 13 cf. 2. From the remarks of the Sanitary  
Engineer in the last para of his report on the  
investigation of a drainage scheme for Mangalore  
town, it will be seen that if the town is to  
have the benefit of the drainage scheme, the  
disposal works will have to be introduced  
first and the remaining work taken up as  
funds permit on a well-thought out programme  
year after year. The Council should therefore  
be prepared to meet the cost of the disposal  
works in the first instance viz. <sup>about</sup> Rs. 1.5 lakhs,  
after which it may take up the construction  
of drains in such localities as stand in  
urgent need of drainage works facilities.

From the Council's resolution on p. 24 it  
seems ~~that the Council has not considered the~~  
~~aspect of the question~~ <sup>that the Council has not considered the</sup>  
~~position to do this~~ <sup>aspect of the question</sup> The Council seems ~~now~~ <sup>more</sup> to be  
anxious to construct drains here and there  
which may ultimately fit with the main scheme  
(~~when it may be taken up for execution~~)  
than to take up the main scheme itself on a  
definite programme. Unless the Council

can hope to carry through the execution of the whole scheme in a reasonable number of years (for which the prior execution of the disposal works seems to be an essential preliminary according to the S.E.'s report) the detailed plans and estimates, if prepared now, may probably become obsolete by the time that it takes up the main scheme. ~~This therefore is a consideration~~ ~~which~~ The attention of the Council may be drawn to this aspect of the matter and that it may be asked to state whether ~~it can find~~ ~~the sum of Rs 1.5 lakhs~~ and also whether its resources will enable it to carry out the scheme on the lines indicated by the S.E. in the last para. of his report and whether it can find the sum of Rs 1.5 lakhs required for the installation of the disposal works.

3. ~~It is ordered whether~~ The S.E. may perhaps ~~report~~ (see the case at this stage and say whether he has any suggestions to make which will help the Council in considering the <sup>above</sup> question.

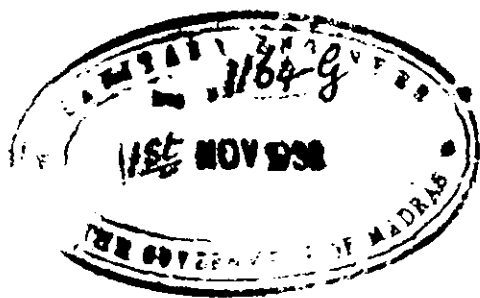
A.

Thro. B1 re. A.

Kv  
17/10 Kv  
18/10

SP  
12/10

The Council's budget for 1932-33 is expected to close with a deficit of Rs 408.



|                                                     |            |
|-----------------------------------------------------|------------|
| Numl. Cl's Share                                    | Rs 329,500 |
| Annuity on loan repayable in 20 years at 5 3/4 p.c. | 28,147     |
| Add Maintenance charges.                            | 12,000     |
| Total B.                                            | 40,147     |
| Yield from 4 p.c. tax                               | 40,000     |

on 31.3.1933 after providing for a capital expenditure of Rs 23,400. the Council will be in a position to find the additional sum of Rs 1200 required for the <sup>preparation plans and estimates</sup> ~~investigation of the~~ scheme if it reduces capital expenditure slightly. As regards the financing of the scheme the Council has no accumulated funds. It may have to borrow its share and levy a water and drainage tax of 4 p.c. to find the annuity and maintenance charges.

25/1/32  
25/1/32

26/1/32

DS

25/1/32

25/1/32

S.E. (no.)

As

If the Municipality is allowed to execute the scheme piece-meal under G.O. No. 1117 dated 7-6-1927, the total cost of the scheme would be reduced, as the centage charges of 15 1/2% will be reduced to only 3% under para 3 sub para 'f' of the above G.O. Allowing a portion of these savings for special supervision charges, the approximate <sup>total</sup> cost of the scheme may not exceed Rs 6/- lakhs.

(referred to) 25/1/32

L.S.G. u.o. 21696-3, E.2.P.H  
31.10.32

As pointed out in the concluding para of the report and rightly emphasised in the note under reply, it is imperative that a portion of disposal works to the extent of Rs 1.5 lakhs should be carried out before launching on piece-meal execution of open drains. But these disposal works also may be spread over 2 or 3 years.

In fact, the whole scheme may be carried out on a definite programme of executing the work to the extent of Rs 60,000 every year; thus the whole scheme may be completed in about 10 years. If the Government were to be pleased to sanction half grant, the Municipality may have to find about Rs 30,000 of its share towards the capital expenditure and it must be possible for the municipality to conserve and adjust its finances to meet this extra expenditure of Rs 30,000 on the all important drainage scheme, though not the whole amount, at least a moiety of it.

For the first 4 or 5 years the maintenance charges may, on the average, not exceed Rs 6,000/- a <sup>year and</sup> ~~year~~ reach to Rs 12,000/- gradually when all the works are carried out.

Under the above circumstances, it must be possible to carry out the scheme on a definite programme spread over 10 years with half grant and the other half with Municipal funds, if not entirely from the present municipal resources, ~~but~~ with additional taxation, thus avoiding the necessity of borrowing.

L.S.G./U.O.

PSN/3-11-32.

G. V. Rao  
3/11/32

48814

GR  
3-11  
22  
3/11

524-9.

4-11-32

ms  
6/11

Please see the remarks of the Sanitary Engineer on page 6 ante.

2. The Sanitary Engineer considers that the drainage scheme for the Mangalore Municipality can be executed on a ten-year programme with an annual expenditure of Rs. 60,000/-. He suggests that if the Govt be prepared to sanction an annual grant of Rs. 30,000/- the Council should be able to conserve and adjust its finances - to find its share, resorting to additional taxation if necessary. The scheme occupies the 38<sup>th</sup> place in the priority list of water supply and drainage schemes appended to G.O. No. 1694. P.H. dated 2-9-1927. If the Council wants to execute the scheme in advance of other schemes in the priority list it will have to meet the cost from its own funds in the first instance. The financing of the scheme on a ten-year programme has therefore to be ~~taken up~~ considered with reference to the Council's ability to meet the entire expenditure (Rs. 60,000 annually) from its own funds. The question whether the Council can finance the scheme on the above basis and the additional

water and drainage tax, if any, which it will have to levy to finance the scheme is examined below.

Thru  $\frac{81}{81}$   $\frac{80}{81}$

by  
16/11  
by

The Council has no accumulated

funds at present to finance the scheme. It levies no water tax.

The surplus in general revenues after levying the local property tax at 10% & allowing credit for 50% of A.M. compn, amounts to Rs 25,000 according to the normal budget prepared by the S.O. About Rs 20,000 out of it, may be set apart for a drainage scheme.

The C. need find only the balance of Rs 40,000 plus the annual maintenance charges of Rs 6,000 to Rs 12,000. One p. tax will yield Rs 10,000. As it is uncertain when the Govt will pay their share, in the year ~~for the~~ <sup>first</sup> the best thing will be to levy a water tax at such a rate as will cover each year's cap. expn & the maintenance charges. If the C. begins with a 5% rate, it can avoid debt; & from the year ~~for~~ <sup>for</sup> are in a position to meet their share of cap. expn, the C. need find an <sup>addl</sup> cap. expn of Rs 10,000.

apart from the money it can transfer from <sup>the</sup> funds.  
 (x 1/pe for capt. The cl can reduce the rate to 2%. The  
 (x 1/pe for maint.) capex of Rs 10000  
 last mentioned rate will suffice to  
 meet the maintenance charges &  
 the rest of the capex expre.

If however the cl prefers to  
 borrow money for each year's  
 capex it will have to  
 impose in the first year after  
 the work is started 1/pe wtd/are & in  
 order to provide for increases of Rs 3417 each year under  
 annuities; increase the rate by 1/3 pe. in each  
 succeeding year. When the Govt's  
 share of the expre is received, the  
 money can be applied to reduce  
 the debt & the rate of wtd tax may  
 be proportionately reduced. &

The views of the cl may be  
 called for  
 24/11  
 20/11

A draft memo is submitted for approval.

KV  
 22/11  
 25/11

10/11  
 12/11

22/11  
 25/11

Thro' 11/11  
 22/11

Asi  
 25/11

Memo No. 21696-4. E.P.H. dated 28.11.32

C no. 1374. From the C.M.C. Mangalore.

C no. 469 of 9.1.33.  
32-33

Please see the resolution of  
the Mangalore M.C. on p 32 cf.

2. The papers may be recorded. The  
draft order below is for approval.

~~Present.~~

$\frac{Kv}{14/1}$  by  
kefi

$\frac{17}{17/1}$  33

When received for Fair-copying  
When copied  
When examined  
When signed  
When despatched

Date. Initials

21/17/11  
17-1-33  
17/11

Drainage - Mangalore Municipality - preparation of plans and estimates - papers recorded.

READ AGAIN G.O. No. , dated 19

READ ALSO:-

C No. 1326 From the C.M.C. Mangalore, No. 49, dated 9-1-1933  
32-33

" " " " " " " " 19

" " " " " " " " 19

ORDER.

MS

No. 116 P.H., dated 17-1-1933

Recorded.

70

The C.M.C. Mangalore  
Copy to S.E. (with copy of pp 31-32 c/f)

|                    |           |
|--------------------|-----------|
| Dpd. by            | Van       |
|                    | Post      |
|                    | Messenger |
| Dpr's initials. 87 |           |
| Date 18/1/33       |           |